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BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES

Chairman

GARY PIERCE

Commissioner

PAUL NEWMAN

Commissioner

SANDRA D. KENNEDY

Commissioner

BOB STUMP

Commissioner

Arizona Corporation Commission

DOCKETED

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IN THE MATTER OF THE APPLICATION
OF DUNCAN VALLEY ELECTRIC
COOPERATIVE, INC. FOR APPROVAL OF
A TARIFF FOR SINGLE PHASE TOU
SERVICE

DOCKET NO. E-01703A-09-0040

DECISION NO. 71636ORDER

Open Meeting
March 31, 2010 and April 1, 2010
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Duncan Valley Electric Cooperative, Inc. ("Duncan Valley", "DVEC", "Applicant" or "Cooperative") is certificated to provide electric service as a non-profit corporation and public service corporation to its member-customers in Duncan, Arizona.

2. On February 2, 2009, Duncan Valley filed an Application ("Application") for authorization to provide Time-of-Use ("TOU") service to its Arizona single phase customers. The application was filed pursuant to Decision No. 69736 (July 30, 2007) which required that "Within 18 months of Commission adoption of this standard, each electric distribution utility shall offer to appropriate customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time

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1 periods and reflects the variance, if any, in the utility's costs of generating and purchasing
2 electricity at the wholesale level."¹

3 3. The Cooperative's TOU rates, as proposed, would initially only be available to
4 single phase residential customers. Duncan Valley's primary reason for initially limiting its
5 proposed TOU rates to residential members is that the Cooperative has not determined the costs or
6 feasibility of offering TOU rate options to its non-residential single phase customers. Staff will
7 address this matter in more detail under its Findings.

8 **Staff's Findings**

9 4. Duncan Valley currently provides electric service to approximately 2,031 members
10 in Arizona, of which approximately 1,918 (94 percent) are single phase customers. Arizona single
11 phase residential members represent nearly 91 percent (1,740/1,918) of Duncan Valley's total
12 Arizona single phase customers.

13 5. The Cooperative's filing and responses to Staff's data requests are summarized as
14 follows: 1) at this time, Duncan Valley has not conducted cost of service or feasibility studies in
15 support of its proposed TOU tariff; 2) the Cooperative relied on its existing rate structure and
16 power costs, as well as TOU filings by similar cooperatives such as Trico Electric Cooperative
17 ("Trico") to develop its proposed TOU rates and time periods; 3) the Cooperative believes that the
18 usage patterns of Trico's members are similar to its customers' usage patterns, and as such, feels
19 comfortable recommending a 70 percent off-peak and 30 percent on-peak usage ratio; 4) the
20 majority of Duncan Valley's customers do not have meters that register and produce a record of
21 hourly usage; 5) the Cooperative has concluded that the variation in non-residential single phase
22 customers' usage is significantly higher than residential customers' usage variations, and has
23 therefore recommended excluding non-residential single phase customers from TOU options at
24 this time; 6) Duncan Valley's purchase power rates are not time differentiated at the wholesale
25 level, consequently there are no energy-related cost savings available to pass on to its retail
26 members; and, 7) load and coincident peak data were not filed in support of the proposed on-peak
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28 ¹ Docket No. E-00000A-06-0038, P. 7, lines 6-9

and off-peak hours, because the Cooperative believes that it is appropriate to use Trico's peak periods and days as models to develop their respective TOU periods. Staff notes that both DVEC and Trico (at the time of this application) buy all of their power from Arizona Electric Power Cooperative ("AEPCO") and pay a demand charge based on their demands at the time of AEPCO's monthly coincident peak.

6. The following summary table was developed by Staff to compare Duncan Valley's existing and proposed rates; and, DVEC's proposed TOU time periods with time periods recently approved for Trico in Decision No. 71253:

RESIDENTIAL RATE CLASS

Table I	Existing	Proposed	Existing
[A]	[B]	[C]	[D]
	<u>Duncan Valley</u> (Non TOU Rates & Hours)	<u>Duncan Valley</u> (TOU Rates & Hours)	<u>Trico Electric*</u> (TOU Hours)
Customer Charge	\$20.00	\$30.00 (\$20 System+\$10 Meter)	
On-Peak per kWh	\$0.07520	\$0.20500	
Off-Peak per kWh	\$0.07520	\$0.06000	
Summer Months	April-October	April-October	April-October
Summer On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	1 p.m. to 7 p.m. (Every Day)	1 p.m. to 9 p.m. (Monday-Friday)
Winter Months	November-March	November-March	November-March
Winter On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	6 a.m. to 9 a.m. and 6 p.m. to 9 p.m. (Every Day)	6 a.m. to 10 a.m. and 6 p.m. to 10 p.m. (Monday-Friday)
Estimated Annual On-Peak Hours		2,190	2,032

*Decision No. 71253 issued September 2, 2009. Off-Peak hours include the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

7. Based on information contained in Table I, Staff concluded that: 1) the Cooperative's proposed monthly Customer Charge in the amount of \$30.00 is unsupported in the Application, and would represent an incremental increase of \$10.00 per month (50 percent); 2) Duncan Valley's proposed annual on-peak hours exceed Trico's annual on-peak hours by 158

1 hours (2,190 – 2,032); and, 3) DVEC's proposed on-peak hours would include all weekends and
2 holidays.

3 8. Staff's discovery also led to the following additional findings: 1) Duncan Valley's
4 filing was made pursuant to Commission Decision No. 69736 dated July 30, 2007, and as such, the
5 Cooperative is also required to "... investigate the feasibility and cost-effectiveness of
6 implementing advanced metering infrastructure for its service territory and shall begin
7 implementing the technology if feasible and cost-effective."²; 2) the approved base cost of power
8 must be taken into consideration before finalizing rate design; and, 3) Duncan Valley's proposal to
9 exclude non-residential single phase TOU customers from proposed Single Phase Time of Use
10 schedule ("SPTOU") is not supported by Staff.

11 **Single Phase Customers**

12 9. Typically, utilities establish rate classes based on type of user; for example:
13 Residential, Small Commercial and Industrial use customers. DVEC has established rate classes
14 that are determined by the nature of the electric service delivered, such as single phase. The single
15 phase rate schedule serves residential and commercial customers who receive power from
16 transformers rated at 15 kVA or less. Single phase capacity accommodates the power needs of
17 nearly all residential and small commercial customers. Normally, only customers with large
18 motors (nominally greater than 10 Horse Power) or air conditioners (nominally greater than 10
19 Tons) require three phase service.

20 10. Staff does not support excluding non-residential single phase customers from the
21 proposed Schedule SPTOU. Duncan Valley's primary reason for requesting the exclusion is that
22 the Cooperative has not developed data to identify the usage patterns or TOU-related costs
23 associated with its small commercial customers. Staff believes that the number of residential
24 customers (1,740) compared to the number of small commercial customers (120) justifies
25 establishing rates, terms and conditions based on the residential class, because the small
26 commercial's impact on the TOU coincident peak is not likely to be significant. Furthermore, any
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28 ² Decision No. 69736, p. 7, lines 11-12

necessary adjustments to the proposed Schedule SPTOU rates, terms and conditions can take place at the end of a one-year experimental pilot period as discussed below.

Energy Rates

11. Although Duncan Valley opted to rely on TOU rates filed by other cooperatives having similar usage patterns, Duncan Valley did not recommend TOU energy rates that have similar on-peak to off-peak rate ratios. Table II illustrates the derivation of rate ratios.

Table II TOU RATES PER KWH AND RESULTANT RATE RATIOS

	<u>Duncan Valley Proposed</u>	<u>Trico Existing</u>	<u>Staff Proposed*</u>
A) On-Peak	\$0.20500	\$0.19320	\$0.10377
B) Off-Peak	\$0.06000	\$0.07320	\$0.05843
C) Ratios (A/B)	3.42	2.64	1.78

*Attachment 3, Part I

12. Duncan Valley's proposed TOU energy rates would create a rate ratio of approximately 3.42, compared to Trico's rate ratio of approximately 2.64 and Staff's proposed rate ratio of approximately 1.78. DVEC's proposed ratio is nearly 30 percent higher than Trico's existing rate ratio and approximately 92 percent above Staff's proposed rate ratio.

13. Staff is concerned about energy ratios because the higher they are compared to the rate ratio of a referenced model, the more unlikely such rates will encourage customers to sign-up for TOU rates as a way to reduce their monthly electric bills. One reason for this likelihood is that prospective TOU customers are seeking balanced TOU rates that provide "reasonable incentives" to move kWh usage to off-peak hours. Although it is nearly impossible to draft a definition that nearly everyone will agree to, most ratepayers agree that rewards (i.e. lower off-peak rates) should be reasonably balanced with potential penalties (i.e. reasonably higher on-peak rates). If a TOU on-peak rate is too severe, customers will opt out rather than expose themselves to a perceived severe financial risk.

14. Attachment 3, Part III illustrates the \$/kWh impact on Duncan Valley's and Staff's proposed TOU rates. A general summary of TOU rates is that an increasing rate ratio is highly correlated (99.56 percent; Attachment 3, Part II) with higher on-peak rates (penalties) that are ...

skewed upward more than off-peak rates (rewards) have been lowered. The following excerpt from Attachment 1 illustrates this point from a different perspective.

Table III RESIDENTIAL BILL COMPARISONS*

kWh Monthly Usage Level	Monthly kWh	Duncan Valley Current Rates	Duncan Valley Proposed TOU Rates	Duncan Valley Monthly Savings	Staff Proposed TOU Rates	Staff Monthly Savings
Low Usage	250	\$38.80	\$55.88	(\$17.08)	\$40.36	(\$1.56)
Average Usage	743	\$75.87	\$106.90	(\$31.03)	\$75.87	\$0.00
Median Usage	1,875	\$161.00	\$224.06	(\$63.06)	\$157.41	\$3.59
High Usage	3,500	\$283.20	\$392.25	(\$109.05)	\$274.46	\$8.74

*Based on 70 percent usage being off-peak

15. At an average usage of 743 kWh per month (based on 2008 annual report data), Duncan Valley's proposed TOU rates would cost residential TOU members approximately \$31 more per month (Attachment 1, Column D), compared to no additional cost under Staff's proposed rates (Attachment 1, Column H). In response to a Staff-initiated data request, on November 24, 2009, Duncan Valley recognized the "negative" outcome of its proposed rates and requested permission to withdraw and re-file its proposed TOU rates as part of its next rate case. Staff does not support allowing the Cooperative to withdraw its proposed TOU rates, because as Staff's Attachment 1 illustrates, TOU rates designed with more appropriate lower rate ratios produce monthly savings or losses that are significantly less extreme compared to existing non-TOU rates.

16. Regarding the 70 percent off-peak usage parameter, Staff believes that a 70 percent off-peak and 30 percent on-peak kWh usage ratio is a reasonable rate design parameter for Duncan Valley's single phase TOU customers. For example, Trico's actual residential TOU kWh usage as filed in its latest rate case was 71 percent off-peak and 29 percent on-peak (Docket No. E-01461A-08-0430, Schedule F-5.2, p. 4).

17. The following table summarizes the sensitivity of rates proposed by Staff under different off and on-peak kWh usage ratios. The impact on customers' monthly billings is fairly modest (under 8/3 percent) at the given usage ratios.

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TABLE IV SENSITIVITY TO DIFFERENT OFF AND ON-PEAK USAGE RATIOS

kWh Monthly Usage Level	Monthly kWh	+/- Deviation From Base Case Monthly Bill	Monthly Bill Under Staff's Proposed Rates @ 75/25	Monthly Bill Under Staff's Proposed Rates @ 70/30 *	Monthly Bill Under Staff's Proposed Rates @ 65/35
Low Usage	250	\$0.57/1.41%	39.79	\$40.36	40.92
Average Usage	743	\$1.68/2.21%	\$74.19	\$75.87	\$77.55
Median Usage	1,875	\$4.25/2.70%	\$153.16	\$157.41	\$161.66
High Usage	3,500	\$7.93/2.89%	\$266.53	\$274.46	\$282.40

* Base Case

18. Attachment 2 contains the derivation of the \$0.05843 per kWh off-peak and \$0.10377 per kWh on-peak rates. These rates are based upon a rate ratio of 1.78 as derived in Table II. Proposed TOU rates must also support the existing approved base cost of power rate. Attachment 3, Part I begins with the existing base cost of power in the amount of \$0.05843 per kWh. Placing the off-peak rate at this level allowed Staff to develop an on-peak rate that produces a revenue neutral on and off-peak combination and a desirable rate ratio of 1.78. As discussed above, it is important to send the right price signals by "right sizing" the perceived "penalty" for using on-peak energy. Attachment 3, Part III illustrates the impact of different rate ratios on reward and penalty TOU rates.

Customer Charge

19. Regarding the Cooperative's proposed monthly Customer Charge in the amount of \$30.00, Staff elected to base its rate design on a \$22.35 Customer Charge, which reflects an increase of \$2.35 per month. The \$2.35 incremental rate is designed to cover the incremental carrying costs associated with the purchase and installation of single phase time-based meters. There are no incremental billing-related costs because, initially, existing employees will manually prepare TOU billings. Staff received cost data that are supported by Form 7, 2009 entries and produce an approximate incremental cost in the amount of \$274 per meter. The annualized carrying costs (10.26 percent) produce an annualized, incremental monthly carrying cost in the amount of approximately \$2.35 ($\$274 \times 10.26\% \div 12$). Staff has recommended approval of its proposed \$22.35 Customer Charge.

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Experimental One-Year Pilot Period

20. Staff believes that TOU rates approved in this docket should be offered to Duncan Valley's single phase customers as an experimental, optional TOU rate alternative. This approach gives the Applicant and Commission more flexibility to adjust rates, terms and conditions during a transition period from Non-TOU rates to optional TOU rates. Staff believes that a one year "pilot" period would be sufficient to identify, but not be limited to, the pros and cons of TOU rates for Duncan Valley's single phase customers, level of customer participation, customer savings or losses, impact on DVEC demand costs, operations and revenues; and, make comparisons between the TOU and net-metering programs.

21. Within one year and 60 days of the Commission's Decision in this matter, Staff has recommended that DVEC present its summary findings and recommendations to the Commission for review. If Duncan Valley files a rate case during the pilot period, Staff recommends that existing TOU rate options be incorporated into the rate case for consideration by the Commission. Under either scenario, Staff has recommended that Schedule SPTOU would remain in effect until acted upon by the Commission.

Fair Value Considerations

22. Staff has considered the proposed equipment charges in terms of fair value implications. In Decision No. 67433, issued on December 3, 2004, the Commission determined the fair value of Duncan Valley's property to be \$2,972,556. According to more recent information provided by Duncan Valley, as of December 31, 2009, the estimated value of Duncan Valley's plant is \$3,195,508. Although Staff considered this information, the proposed equipment charges on Schedule SPTOU would have no significant impact on the Cooperative's revenue, fair value rate base, or rate of return, because these charges are cost-based and relatively limited in scope.

Summary of Recommendations

23. Based on information contained in the Application and developed through discovery, Staff has made the following recommendations in its Memorandum:

- A. Staff has recommended that Schedule SPTOU be approved as an experimental one-year pilot with Staff's proposed rates.

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- 1 B. In the absence of empirical data, Staff has recommended the adoption of
2 the currently approved Trico Electric's TOU hours, days, months and
3 holidays as approved in Decision No. 71253, and as summarized in
 Finding of Fact No. 6, Table I, Column D.
- 4 C. Within 90 days of the Commission's Decision in this matter, Staff has
5 recommended that Duncan Valley be required to docket empirical data
6 that support its decision to not install an advanced metering
 infrastructure as required by Decision No. 69736.
- 7 D. Within 30 days of the Commission's Decision in this matter, Staff has
8 recommended that Duncan Valley be required to docket data that
9 identify its 2009 monthly coincident and non-coincident power peaks
 (kW), and identify the times, dates and weekdays of the peaks.
- 10 E. Staff has recommended that Duncan Valley be ordered to file a revised
11 Schedule SPTOU in compliance with the Decision in this matter within
 15 days of the effective date of the Decision.

12 CONCLUSIONS OF LAW

- 13 1. Duncan Valley Electric Cooperative, Inc. is a public service corporation within the
14 meaning of Article XV, Section 2 of the Arizona Constitution.
- 15 2. The Commission has jurisdiction over the Duncan Valley Electric Cooperative, Inc.
16 and subject matter of the Application.
- 17 3. Approval of the Duncan Valley Electric Cooperative's proposed Rate Schedule
18 SPTOU in this application does not constitute a rate increase as contemplated by A.R.S. Section
19 40-250.
- 20 4. The Commission, having reviewed the Application and Staff's Memorandum dated
21 March 16, 2010, concludes that it is in the public interest to approve the Cooperative's proposed
22 Schedule SPTOU as discussed and revised herein.

23 ORDER

24 IT IS THEREFORE ORDERED that Duncan Valley Electric Cooperative, Inc.'s proposed
25 Schedule SPTOU, as discussed and revised herein, be and hereby is approved as an experimental
26 pilot with Staff's proposed rates, until further order of the Commission.

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1 IT IS FURTHER ORDERED that within 14 months of the Commission's Decision in this
2 matter, Duncan Valley Electric Cooperative, Inc. docket its summary findings and
3 recommendations regarding the pilot program for consideration by the Commission.

4 IT IS FURTHER ORDERED that Staff recommended time-of-use hours, days, months and
5 holidays as summarized in Decision No. 71253 and Finding of Fact No. 6, Table I, Column D, of
6 this Decision be adopted by Duncan Valley Electric Cooperative, Inc.

7 IT IS FURTHER ORDERED that within 90 days of the Commission's Decision in this
8 matter, Duncan Valley Electric Cooperative, Inc. shall docket empirical data that support its
9 decision to not install an advanced metering infrastructure as required by Decision No. 69736.

10 IT IS FURTHER ORDERED that within 30 days of the Commission's Decision in this
11 matter, Duncan Valley Electric Cooperative, Inc. shall docket data that identify its 2009 monthly
12 coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of
13 the peaks.

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1 IT IS FURTHER ORDERED that Duncan Valley Electric Cooperative, Inc. shall docket,
2 as a compliance item in this matter, tariff pages for the approved Schedule SPTOU within 15 days
3 from the effective date of the Decision in this matter.

4 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

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6 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

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8 CHAIRMAN


COMMISSIONER

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11 COMMISSIONER


COMMISSIONER


COMMISSIONER

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13 IN WITNESS WHEREOF, I, ERNEST G. JOHNSON,
14 Executive Director of the Arizona Corporation Commission,
15 have hereunto, set my hand and caused the official seal of
16 this Commission to be affixed at the Capitol, in the City of
17 Phoenix, this 14th day of April, 2010.

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19 ERNEST G. JOHNSON
20 EXECUTIVE DIRECTOR

21 DISSENT: _____

22 DISSENT: _____

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2 DOCKET NO. E-01703A-09-0040

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